

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 10/575,928  
Source: IFWO  
Date Processed by STIC: 03/28/2007

# ***ENTERED***



IFWO

## RAW SEQUENCE LISTING

DATE: 03/28/2007

PATENT APPLICATION: US/10/575,928

TIME: 11:07:46

Input Set : A:\19746.seq.txt

Output Set: N:\CRF4\03282007\J575928.raw

```

3 <110> APPLICANT: Ward, Larry D.
4 Thomson, Helen
6 <120> TITLE OF INVENTION: Poxvirus vector encoding retrovirus (eg HIV) and cytokine
8 <130> FILE REFERENCE: 19746
10 <140> CURRENT APPLICATION NUMBER: 10/575,928
C--> 11 <141> CURRENT FILING DATE: 2006-04-14
13 <150> PRIOR APPLICATION NUMBER: AU 2003905642
14 <151> PRIOR FILING DATE: 2003-10-15
16 <150> PRIOR APPLICATION NUMBER: AU 2003905683
17 <151> PRIOR FILING DATE: 2003-10-16
19 <160> NUMBER OF SEQ ID NOS: 7
21 <170> SOFTWARE: PatentIn version 3.2
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 1329
25 <212> TYPE: DNA
26 <213> ORGANISM: Human immunodeficiency virus
28 <220> FEATURE:
29 <221> NAME/KEY: CDS
30 <222> LOCATION: (1)..(1329)
32 <400> SEQUENCE: 1
33 atg ggt gcg aga gcg tcg gta tta agc ggg gga gaa tta gat aaa tgg      48
34 Met Gly Ala Arg Ala Ser Val Leu Ser Gly Gly Glu Leu Asp Lys Trp
35 1 5 10 15
37 gaa aaa att cgg tta agg cca ggg gga aag aaa aaa tat aag tta aaa      96
38 Glu Lys Ile Arg Leu Arg Pro Gly Gly Lys Lys Lys Tyr Lys Leu Lys
39 20 25 30
41 cat ata gta tgg gca agc agg gag cta gaa cga ttc gca gtc aat cct      144
42 His Ile Val Trp Ala Ser Arg Glu Leu Glu Arg Phe Ala Val Asn Pro
43 35 40 45
45 ggc ctg tta gaa aca tca gaa ggc tgc aga caa ata ttg gga cag cta      192
46 Gly Leu Leu Glu Thr Ser Glu Gly Cys Arg Gln Ile Leu Gly Gln Leu
47 50 55 60
49 cag cca tcc ctt cag aca gga tca gaa gaa ctt aga tca tta tat aat      240
50 Gln Pro Ser Leu Gln Thr Gly Ser Glu Glu Leu Arg Ser Leu Tyr Asn
51 65 70 75 80
53 aca gta gca acc ctc tat tgt gta cat caa agg ata gat gta aaa gac      288
54 Thr Val Ala Thr Leu Tyr Cys Val His Gln Arg Ile Asp Val Lys Asp
55 85 90 95
57 acc aag gaa gct tta gag aag ata gag gaa gag caa aac aaa agt aag      336
58 Thr Lys Glu Ala Leu Glu Lys Ile Glu Glu Glu Gln Asn Lys Ser Lys
59 100 105 110
61 aaa aag gca cag caa gca gca gct gca gct ggc aca gga aac agc agc      384
62 Lys Lys Ala Gln Gln Ala Ala Ala Ala Gly Thr Gly Asn Ser Ser

```

## RAW SEQUENCE LISTING

DATE: 03/28/2007

PATENT APPLICATION: US/10/575,928

TIME: 11:07:46

Input Set : A:\19746.seq.txt

Output Set: N:\CRF4\03282007\J575928.raw

63	115	120	125	
65	cag gtc agc caa aat tac cct ata gtg cag aac cta cag ggg caa atg	432		
66	Gln Val Ser Gln Asn Tyr Pro Ile Val Gln Asn Leu Gln Gly Gln Met			
67	130	135	140	
69	gta cat cag gcc ata tca cct aga act tta aat gca tgg gta aaa gta	480		
70	Val His Gln Ala Ile Ser Pro Arg Thr Leu Asn Ala Trp Val Lys Val			
71	145	150	155	160
73	gta gaa gaa aag gct ttc agc cca gaa gta ata ccc atg ttt tca gca	528		
74	Val Glu Glu Lys Ala Phe Ser Pro Glu Val Ile Pro Met Phe Ser Ala			
75	165	170	175	
77	tta tca gaa gga gcc acc cca caa gat tta aac acc atg cta aac aca	576		
78	Leu Ser Glu Gly Ala Thr Pro Gln Asp Leu Asn Thr Met Leu Asn Thr			
79	180	185	190	
81	gtg ggg gga cat caa gca gcc atg caa atg tta aaa gag act atc aat	624		
82	Val Gly Gly His Gln Ala Ala Met Gln Met Leu Lys Glu Thr Ile Asn			
83	195	200	205	
85	gag gaa gct gca gaa tgg gat aga gtg cat cca gtg cat gca ggg cct	672		
86	Glu Glu Ala Ala Glu Trp Asp Arg Val His Pro Val His Ala Gly Pro			
87	210	215	220	
89	att gca cca ggc caa atg aga gaa cca agg gga agt gac ata gca gga	720		
90	Ile Ala Pro Gly Gln Met Arg Glu Pro Arg Gly Ser Asp Ile Ala Gly			
91	225	230	235	240
93	act act agt acc ctt cag gaa caa ata gga tgg atg aca aat aat cca	768		
94	Thr Thr Ser Thr Leu Gln Glu Gln Ile Gly Trp Met Thr Asn Asn Pro			
95	245	250	255	
97	cct atc cca gta gga gaa atc tat aaa aga tgg ata atc ctg gga tta	816		
98	Pro Ile Pro Val Gly Glu Ile Tyr Lys Arg Trp Ile Ile Leu Gly Leu			
99	260	265	270	
101	aat aaa ata gta aga atg tat agc cct acc agc att ctg gac ata aga	864		
102	Asn Lys Ile Val Arg Met Tyr Ser Pro Thr Ser Ile Leu Asp Ile Arg			
103	275	280	285	
105	caa gga cca aag gaa ccc ttt aga gat tat gta gac cgg ttc tat aaa	912		
106	Gln Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp Arg Phe Tyr Lys			
107	290	295	300	
109	act cta aga gcc gaa caa gct tca cag gat gta aaa aat tgg atg aca	960		
110	Thr Leu Arg Ala Glu Gln Ala Ser Gln Asp Val Lys Asn Trp Met Thr			
111	305	310	315	320
113	gaa acc ttg ttg gtc caa aat gca aac cca gat tgt aag act att tta	1008		
114	Glu Thr Leu Leu Val Gln Asn Ala Asn Pro Asp Cys Lys Thr Ile Leu			
115	325	330	335	
117	aaa gca ttg gga cca gca gct aca cta gaa gaa atg atg aca gca tgt	1056		
118	Lys Ala Leu Gly Pro Ala Ala Thr Leu Glu Glu Met Met Thr Ala Cys			
119	340	345	350	
121	cag gga gtg ggg gga ccc ggc cat aaa gca aga gtt ttg gct gaa gcc	1104		
122	Gln Gly Val Gly Gly Pro Gly His Lys Ala Arg Val Leu Ala Glu Ala			
123	355	360	365	
125	atg agc caa gta aca aat cca gct aac ata atg atg cag aga ggc aat	1152		
126	Met Ser Gln Val Thr Asn Pro Ala Asn Ile Met Met Gln Arg Gly Asn			
127	370	375	380	

## RAW SEQUENCE LISTING

DATE: 03/28/2007

PATENT APPLICATION: US/10/575,928

TIME: 11:07:46

Input Set : A:\19746.seq.txt

Output Set: N:\CRF4\03282007\J575928.raw

```

129 ttt agg aac caa aga aag act gtt aag tgt ttc aat tgt ggc aaa gaa      1200
130 Phe Arg Asn Gln Arg Lys Thr Val Lys Cys Phe Asn Cys Gly Lys Glu
131 385                      390                      395                      400
133 ggg cac ata gcc aaa aat tgc agg gcc cct agg aaa aag ggc tgt tgg      1248
134 Gly His Ile Ala Lys Asn Cys Arg Ala Pro Arg Lys Lys Gly Cys Trp
135                      405                      410                      415
137 aga tgt gga agg gaa gga cac caa atg aaa gat tgc act gag aga cag      1296
138 Arg Cys Gly Arg Glu Gly His Gln Met Lys Asp Cys Thr Glu Arg Gln
139                      420                      425                      430
141 gct aat ttt tta ggg aag atc tgg cct tcc tac                        1329
142 Ala Asn Phe Leu Gly Lys Ile Trp Pro Ser Tyr
143                      435                      440
146 <210> SEQ ID NO: 2
147 <211> LENGTH: 443
148 <212> TYPE: PRT
149 <213> ORGANISM: Human immunodeficiency virus
151 <400> SEQUENCE: 2
153 Met Gly Ala Arg Ala Ser Val Leu Ser Gly Gly Glu Leu Asp Lys Trp
154 1                      5                      10                      15
157 Glu Lys Ile Arg Leu Arg Pro Gly Gly Lys Lys Lys Tyr Lys Leu Lys
158                      20                      25                      30
161 His Ile Val Trp Ala Ser Arg Glu Leu Glu Arg Phe Ala Val Asn Pro
162                      35                      40                      45
165 Gly Leu Leu Glu Thr Ser Glu Gly Cys Arg Gln Ile Leu Gly Gln Leu
166                      50                      55                      60
169 Gln Pro Ser Leu Gln Thr Gly Ser Glu Glu Leu Arg Ser Leu Tyr Asn
170 65                      70                      75                      80
173 Thr Val Ala Thr Leu Tyr Cys Val His Gln Arg Ile Asp Val Lys Asp
174                      85                      90                      95
177 Thr Lys Glu Ala Leu Glu Lys Ile Glu Glu Glu Gln Asn Lys Ser Lys
178                      100                     105                     110
181 Lys Lys Ala Gln Gln Ala Ala Ala Ala Ala Gly Thr Gly Asn Ser Ser
182                      115                     120                     125
185 Gln Val Ser Gln Asn Tyr Pro Ile Val Gln Asn Leu Gln Gly Gln Met
186                      130                     135                     140
189 Val His Gln Ala Ile Ser Pro Arg Thr Leu Asn Ala Trp Val Lys Val
190 145                     150                     155                     160
193 Val Glu Glu Lys Ala Phe Ser Pro Glu Val Ile Pro Met Phe Ser Ala
194                      165                     170                     175
197 Leu Ser Glu Gly Ala Thr Pro Gln Asp Leu Asn Thr Met Leu Asn Thr
198                      180                     185                     190
201 Val Gly Gly His Gln Ala Ala Met Gln Met Leu Lys Glu Thr Ile Asn
202                      195                     200                     205
205 Glu Glu Ala Ala Glu Trp Asp Arg Val His Pro Val His Ala Gly Pro
206                      210                     215                     220
209 Ile Ala Pro Gly Gln Met Arg Glu Pro Arg Gly Ser Asp Ile Ala Gly
210 225                     230                     235                     240
213 Thr Thr Ser Thr Leu Gln Glu Gln Ile Gly Trp Met Thr Asn Asn Pro
214                      245                     250                     255

```

## RAW SEQUENCE LISTING

DATE: 03/28/2007

PATENT APPLICATION: US/10/575,928

TIME: 11:07:46

Input Set : A:\19746.seq.txt

Output Set: N:\CRF4\03282007\J575928.raw

```

217 Pro Ile Pro Val Gly Glu Ile Tyr Lys Arg Trp Ile Ile Leu Gly Leu
218           260           265           270
221 Asn Lys Ile Val Arg Met Tyr Ser Pro Thr Ser Ile Leu Asp Ile Arg
222           275           280           285
225 Gln Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp Arg Phe Tyr Lys
226           290           295           300
229 Thr Leu Arg Ala Glu Gln Ala Ser Gln Asp Val Lys Asn Trp Met Thr
230 305           310           315           320
233 Glu Thr Leu Leu Val Gln Asn Ala Asn Pro Asp Cys Lys Thr Ile Leu
234           325           330           335
237 Lys Ala Leu Gly Pro Ala Ala Thr Leu Glu Glu Met Met Thr Ala Cys
238           340           345           350
241 Gln Gly Val Gly Gly Pro Gly His Lys Ala Arg Val Leu Ala Glu Ala
242           355           360           365
245 Met Ser Gln Val Thr Asn Pro Ala Asn Ile Met Met Gln Arg Gly Asn
246           370           375           380
249 Phe Arg Asn Gln Arg Lys Thr Val Lys Cys Phe Asn Cys Gly Lys Glu
250 385           390           395           400
253 Gly His Ile Ala Lys Asn Cys Arg Ala Pro Arg Lys Lys Gly Cys Trp
254           405           410           415
257 Arg Cys Gly Arg Glu Gly His Gln Met Lys Asp Cys Thr Glu Arg Gln
258           420           425           430
261 Ala Asn Phe Leu Gly Lys Ile Trp Pro Ser Tyr
262           435           440
265 <210> SEQ ID NO: 3
266 <211> LENGTH: 3012
267 <212> TYPE: DNA
268 <213> ORGANISM: Human immunodeficiency virus
271 <220> FEATURE:
272 <221> NAME/KEY: CDS
273 <222> LOCATION: (1)..(3012)
275 <400> SEQUENCE: 3
276 ttt ttt agg gaa gat ctg gcc ttc cta caa ggg aag gcc agg gaa ttt      48
277 Phe Phe Arg Glu Asp Leu Ala Phe Leu Gln Gly Lys Ala Arg Glu Phe
278 1           5           10           15
280 tct tca gag cag acc aga gcc aac agc ccc acc aga aga gag ctt cag      96
281 Ser Ser Glu Gln Thr Arg Ala Asn Ser Pro Thr Arg Arg Glu Leu Gln
282           20           25           30
284 gtt tgg gga gga gaa aac aac tcc ctc tca gaa gca gga gcc gat aga      144
285 Val Trp Gly Gly Glu Asn Asn Ser Leu Ser Glu Ala Gly Ala Asp Arg
286           35           40           45
288 caa gga act gta tcc ttt aac ttc cct cag atc act ctt tgg caa cga      192
289 Gln Gly Thr Val Ser Phe Asn Phe Pro Gln Ile Thr Leu Trp Gln Arg
290           50           55           60
292 ccc ctc gtc aca ata agg ata ggg ggg caa cta aag gaa gct cta tta      240
293 Pro Leu Val Thr Ile Arg Ile Gly Gly Gln Leu Lys Glu Ala Leu Leu
294 65           70           75           80
296 gat aca gga gca gat gat aca gta tta gaa gaa atg aat ttg cca gga      288
297 Asp Thr Gly Ala Asp Asp Thr Val Leu Glu Glu Met Asn Leu Pro Gly

```

## RAW SEQUENCE LISTING

DATE: 03/28/2007

PATENT APPLICATION: US/10/575,928

TIME: 11:07:46

Input Set : A:\19746.seq.txt

Output Set: N:\CRF4\03282007\J575928.raw

298		85		90		95		
300	aaa tgg aaa cca aaa atg ata ggg gga att gga ggt ttt atc aaa gta							336
301	Lys Trp Lys Pro Lys Met Ile Gly Gly Ile Gly Gly Phe Ile Lys Val							
302		100		105		110		
304	aga cag tac gat cag ata cct gta gaa atc tgt gga cat aaa gct ata							384
305	Arg Gln Tyr Asp Gln Ile Pro Val Glu Ile Cys Gly His Lys Ala Ile							
306		115		120		125		
308	ggg aca gta tta gta gga cct aca cct gtc aac ata att gga aga aat							432
309	Gly Thr Val Leu Val Gly Pro Thr Pro Val Asn Ile Ile Gly Arg Asn							
310		130		135		140		
312	ctg ttg act cag att ggt tgt act tta aat ttc ccc att agt cct att							480
313	Leu Leu Thr Gln Ile Gly Cys Thr Leu Asn Phe Pro Ile Ser Pro Ile							
314	145		150		155		160	
316	gaa act gta cca gta aaa tta aag cca gga atg gat ggc cca aaa gtt							528
317	Glu Thr Val Pro Val Lys Leu Lys Pro Gly Met Asp Gly Pro Lys Val							
318		165		170		175		
320	aag caa tgg cca ttg aca gaa gaa aaa ata aaa gca tta gta gag ata							576
321	Lys Gln Trp Pro Leu Thr Glu Glu Lys Ile Lys Ala Leu Val Glu Ile							
322		180		185		190		
324	tgt aca gaa atg gaa aag gaa ggg aaa att tca aaa att ggg cct gaa							624
325	Cys Thr Glu Met Glu Lys Glu Gly Lys Ile Ser Lys Ile Gly Pro Glu							
326		195		200		205		
328	aat cca tac aat act cca gta ttt gct ata aag aaa aaa gac agt act							672
329	Asn Pro Tyr Asn Thr Pro Val Phe Ala Ile Lys Lys Lys Asp Ser Thr							
330		210		215		220		
332	aaa tgg aga aaa cta gta gat ttc aga gaa ctt aat aaa aga act caa							720
333	Lys Trp Arg Lys Leu Val Asp Phe Arg Glu Leu Asn Lys Arg Thr Gln							
334	225		230		235		240	
336	gac ttc tgg gaa gtt cag tta gga ata cca cac ccc gca ggg tta aaa							768
337	Asp Phe Trp Glu Val Gln Leu Gly Ile Pro His Pro Ala Gly Leu Lys							
338		245		250		255		
340	aag aaa aaa tca gta aca gta ttg gat gtg ggt gat gca tac ttt tca							816
341	Lys Lys Lys Ser Val Thr Val Leu Asp Val Gly Asp Ala Tyr Phe Ser							
342		260		265		270		
344	gtt ccc tta gat aaa gac ttt aga aag tat act gca ttt acc ata cct							864
345	Val Pro Leu Asp Lys Asp Phe Arg Lys Tyr Thr Ala Phe Thr Ile Pro							
346		275		280		285		
348	agt ata aac aat gag aca cca ggg att aga tat cag tac aat gtg ctg							912
349	Ser Ile Asn Asn Glu Thr Pro Gly Ile Arg Tyr Gln Tyr Asn Val Leu							
350		290		295		300		
352	cca cag gga tgg aaa gga tca cca gca ata ttc caa agt agc atg aca							960
353	Pro Gln Gly Trp Lys Gly Ser Pro Ala Ile Phe Gln Ser Ser Met Thr							
354	305		310		315		320	
356	aaa atc tta gag cct ttt aga aaa cag aat cca gac ata gtt atc tat							1008
357	Lys Ile Leu Glu Pro Phe Arg Lys Gln Asn Pro Asp Ile Val Ile Tyr							
358		325		330		335		
360	caa tac atg gat gat ttg tat gta gga tct gac tta gaa ata ggg cag							1056
361	Gln Tyr Met Asp Asp Leu Tyr Val Gly Ser Asp Leu Glu Ile Gly Gln							
362		340		345		350		

VERIFICATION SUMMARY

DATE: 03/28/2007

PATENT APPLICATION: US/10/575,928

TIME: 11:07:47

Input Set : A:\19746.seq.txt

Output Set: N:\CRF4\03282007\J575928.raw

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date